

**Notice of Allowability**

Application No.

10/027,893

Examiner

Vinit H. Patel

Applicant(s)

OKADA ET AL.

Art Unit

1764

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 15 September 2005.
2. ☒ The allowed claim(s) is/are 1-3, 5 and 8-13.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
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### **REASONS FOR ALLOWANCE**

The following is an examiner's statement of reasons for allowance: Reforming apparatus for fuel cells comprising a vaporizer, reformer, CO removal unit and air control devices are generally well known in the art.

Applicant's invention is directed toward an apparatus for generation of hydrogen for a fuel cell comprising a vaporizer, CO eliminator, and reforming air amount controller device that controls the supply of the reforming air needed in the reformer during warm-up of the reformer such that it is larger than the supplied amount of the reforming air during idle operation after completion of warm-up wherein the control device further controls the amount of reforming air so as to decrease the supplied amount which was increased by the controlling device during warm-up of the reformer when the temperature of the reformer is higher than a first predetermined temperature determined by the regeneration temperature of the reforming catalyst in the reformer.

Applicant's invention is also directed toward an apparatus for generation of hydrogen for a fuel cell comprising a vaporizer, CO eliminator, and CO eliminator amount controller device that controls the supply of the air CO eliminator in order to decrease the air supply which was increased by the CO eliminator control device during warm-up of the CO eliminator when the temperature of the CO eliminator is higher than a pre-determined temperature determined by the regeneration temperature of the CO eliminating catalyst.

A search of the prior art revealed U.S. Patent No. 6,833,208 to Kotani et al., U.S. Patent No. 6,797,418 to Nomura et al., and U.S. Patent No. 4,693,882 to Setzer et al.

Applicant has amended the claims such that the cited references alone or in combination fail to teach or suggest and reforming air amount controller device that controls the supply of the reforming air needed in the reformer during warm-up of the reformer such that it is larger than the supplied amount of the reforming air during idle operation after completion of warm-up wherein the control device further controls the amount of reforming air so as to decrease the supplied amount which was increased by the controlling device during warm-up of the reformer when the temperature of the reformer is higher than a first predetermined temperature determined by the regeneration temperature of the reforming catalyst in the reformer or and CO eliminator amount controller device that controls the supply of the air CO eliminator in order to decrease the air supply which was increased by the CO eliminator control device during warm-up of the CO eliminator when the temperature of the CO eliminator is higher than a pre-determined temperature determined by the regeneration temperature of the CO eliminating catalyst.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vinit H. Patel whose telephone number is (571) 272-0856. The examiner can normally be reached M-F 9:00 am - 5:00 pm.

Art Unit: 1764

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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A handwritten signature in black ink, appearing to read 'Glenn Caldarola'.

Glenn Caldarola  
Supervisory Patent Examiner  
Art Unit: 1764